1988 Journal of Fluids Engineering Index

INDEX, BY SUBJECT MATTER TO JFE VOLUME 110, Nos. 1-4, 1988

EDUCATION

Fluids Engineering Education: Current Status and Future Directions, C. Dalton and J. P. Lamb, March, 4–8.

Basic Elements in a Fluid Mechanics Laboratory Experience: An Engineering Science Approach, J. F. Foss, March, 9–15.

FLUID MACHINERY

Analysis of Hydrodynamic Radial Forces on Centrifugal Pump Impellers, D. R. Adkins and C. E. Brennen, March, 20–28.

Effect of Particle Characteristics on Trajectories and Blade Impact Patterns, A. Hamed, March, 33–37.

Limitation of Ejector Performance Due to Exit Choking, J. C. Dutton and B. F. Carroll, March, 91.

Unified Equation of Motion (UEM) Approach as Applied to SI Turbomachinery Problems, S. Abdallah, C. F. Smith, and M. W. McBride, September, 251–256.

Experimental and Numerical Study of Response of an Axial Compressor to Distorted Inlet Flow, G. Billet, J. Huard, P. Chevalier, and P. Leval, December, 355–360.

Measurement of Intake Valve/Cylinder Boundary Flows Using A Multiple Orientation Hot-Wire Technique, T. C. Wagner and J. C. Kent, December, 361–366.

Studies of Power Station Feed Pump Loss of Suction Pressure Incidents, R. R. Cranfield, December, 453–461.

DIFFUSERS FLOWS

Exploration of Iceformation Method Applied to a Diffuser, R. S. LaFleur, September, 244–250.

FLOWS IN VALVES

Performance of Butterfly Valves as a Flow Controller, K. Eom, September, 16–19.

Noise and Vibration Related to the Patterns of Supersonic Annular Flow in a Pressure Reducing Gas Valve, Masami Nakano, Elsuke Outa, and Kiyohiro Tajima, March, 55–61.

FLUID MEASUREMENTS

An Explicit Non-Real Time Data Reduction Method of Triple Sensors Hot-Wire Anemometer in Three-Dimensional Flow, Y. T. Chew and R. L. Simpson, June, 110–119.

Sensitivity of Three Sensor Hot Wire Probe to a Yaw and Pitch Angle Variation, B. Lakshminarayana and R. Davino, June, 120–122.

Visualization Techniques for Unsteady Flows: An Overview, Mohamed Gad-el-Hak, September, 231–243.

Turbulence Measurements with Symmetrically Bent V-Shaped Hot-Wires. Part 1: Principles of Operation, M. Hishida and Y. Nagano, September 264–269.

Turbulence Measurements with Symmetrically Bent V-Shaped Hot-Wires. Part 2: Measuring Velocity Components and Turbulent Shear Stresses, M. Hishida and Y. Nagano, September, 270–274.

Laser Velocimeter Measurements in a Model Propeller Flowfield, J. Lepicovsky, December, 350–354.

COMPUTATIONAL FLUID DYNAMICS

Navier-Stokes Computation of Radial Inflow Turbine Distributor, T. C. Wu and W. Shvy, March, 29–32.

Supercomputing of Supersonic Flows Using Upwind Relaxation and MacCormack Schemes, Oktay Baysal, March 62–68.

Solution Procedure for Unsteady Two-Dimensional Boundary Layers, O. Key Kwon, R. H. Pletcher, and R. A. Delaney, March, 69–75.

Vectorizable Implicit Algorithms for the Flux-Difference Split, Three-Dimensional Navier-Stokes Equations, P-M. Hatwich, C-H. Hsu, and C. H. Liu, September, 297–305.

Consistent Boundary Conditions for Reduced Navier-Stokes (RNS) Scheme Applied to Three-Dimensional Viscous Flow, D. R. Reddy and S. G. Rubin, September, 306–314.

LAMINAR FLOWS

Incremental Pressure Drop Number in Parallel-Plate Heat Exchangers, T. V. Nguyen and I. L. Maclaine-cross, March, 93–96.

Time-Dependent Laminar Backward-Facing Step Flow in a Two-Dimensional Duct, F. Durst and J. C. F. Pereira, September, 289–296.

Very Low Reynolds Number Flow Through Screens, B. R. Munson, December, 462–463.

LAMINARIZATION

Predictions of the Laminarization Phenomena in an Axially Rotating Pipe Flow, Shurichiro Hirai, Toshimi Takagi, and Masaharu Matsumoto, December 424–430.

TURBULENT FLOWS

A Reynolds-Stress Model for Near-Wall and Low-Reynolds-Number Regions, Nobuyuki Shima, March, 38–44.

Experimental and Computational Investigation of the Two-Dimensional Channel Flow Over Two Fences in Tandem, F. Durst, M. Founti, and S. Obi, March, 48–54.

Some Observations of Flow Patterns and Statistical Properties of Three Component Flows, H. K. Kytömaa and C. E. Brennen, March, 76–84.

Eddy Viscosity Distributions Through the Transition of an Incompressible Free Jet, S. Emami, G. Morrison, and G. Tatterson, March, 98–100.

Module Friction Factors and Intramodular Pressure Distributions for Periodic Fully Developed Turbulent Flow in Rectangular Interrupted-Plate Ducts, R. K. McBrien and B. R. Baliga, June 147–154.

A Comparison of Algebraic and Differential Second-Moment Closures for Axisymmetric Turbulent Shear Flows With and Without Swirl, S. Fu, P. G. Huang, B. E. Launder, and M. A. Leschziner, June, 216–221.

Mean Flow and Turbulence Measurements of Annular Swirling Flows, F. M. Yowakim and R. J. Kind, September, 257–263.

An LDA Study of the Backward-Facing Step Flow, Including the Effects of Velocity Bias, E. W. Adams and J. K. Eaton, September, 275–282.

Radial and Axial Turbulent Flow Measurements with an LDV in an Axisymmetric Sudden Expansion Air Flow, R. P. Durrett, W. H. Stevenson, and H. D. Thompson, December, 367–372.

Symmetric and Asymmetric Turbulent Flows in a Rectangular Duct With a Pair of Ribs, T.-M. Liou and C.-F. Kao, December, 373–379.

Measurement and Prediction of the Effects of Nonuniform Surface Roughness on Turbulent Flow Friction Coefficients, R. P. Taylor, W. F. Scaggs, and H. W. Coleman, December, 380–384.

Measurement and Prediction of the Effects of Rough Wall Effects on Friction Factor-Uniform Roughness Results, W. F. Scaggs, R. P. Taylor, and H. W. Coleman, December, 385–391.

The Mean Flow Structure Around and Within a Turbulent Junction of Horseshoe Vortex—Part I: The Upstream and Surrounding Three-Dimensional Boundary Layer, J. D. Menna and F. J. Pierce, December, 406–414.

The Mean Flow Structure Around and Within a Turbulent Junction of Horsehose Vortex—Part II: The Separated and Junction Vortex Flow, F. J. Pierce and M. D. Harsh, December, 415–423.

Determination of Incompressible Flow Friction in Smooth Circular and Noncircular Passages: A Generalized Approach Including Validation of the Nearly Century Old Hydraulic Diameter Concept, N. T. Obot, December, 431–440.

BLUFF-BODY FLOWS

Theoretical Calculations of the Flow Around a Rotating Circular Cylinder Placed in a Uniform Flow, Taha K. Aldoss and Awad Mansour, March, 96–97.

Development of the Reattached Flow Behind Surface-Mounted Two-Dimensional Prisms, J. Antoniou and G. Bergeles, June, 127–133.

Effect of Free-Stream Turbulence on Characteristics of Fluctuating Forces Acting on Two Square Prisms in Tandem Arrangement, H. Sakamoto and H. Haniku, June, 140–146.

Details of the Computed Flow Field Over a Circular Cylinder at Reynolds Number 1200, C. L. Rumsey, December, 446–452.

1988 Journal of Fluids Engineering Index

INDEX, BY SUBJECT MATTER TO JFE VOLUME 110, Nos. 1-4, 1988

EDUCATION

Fluids Engineering Education: Current Status and Future Directions, C. Dalton and J. P. Lamb, March, 4–8.

Basic Elements in a Fluid Mechanics Laboratory Experience: An Engineering Science Approach, J. F. Foss, March, 9–15.

FLUID MACHINERY

Analysis of Hydrodynamic Radial Forces on Centrifugal Pump Impellers, D. R. Adkins and C. E. Brennen, March, 20–28.

Effect of Particle Characteristics on Trajectories and Blade Impact Patterns, A. Hamed, March, 33–37.

Limitation of Ejector Performance Due to Exit Choking, J. C. Dutton and B. F. Carroll, March, 91.

Unified Equation of Motion (UEM) Approach as Applied to SI Turbomachinery Problems, S. Abdallah, C. F. Smith, and M. W. McBride, September, 251–256.

Experimental and Numerical Study of Response of an Axial Compressor to Distorted Inlet Flow, G. Billet, J. Huard, P. Chevalier, and P. Leval, December, 355–360.

Measurement of Intake Valve/Cylinder Boundary Flows Using A Multiple Orientation Hot-Wire Technique, T. C. Wagner and J. C. Kent, December, 361–366.

Studies of Power Station Feed Pump Loss of Suction Pressure Incidents, R. R. Cranfield, December, 453–461.

DIFFUSERS FLOWS

Exploration of Iceformation Method Applied to a Diffuser, R. S. LaFleur, September, 244–250.

FLOWS IN VALVES

Performance of Butterfly Valves as a Flow Controller, K. Eom, September, 16–19.

Noise and Vibration Related to the Patterns of Supersonic Annular Flow in a Pressure Reducing Gas Valve, Masami Nakano, Elsuke Outa, and Kiyohiro Tajima, March, 55–61.

FLUID MEASUREMENTS

An Explicit Non-Real Time Data Reduction Method of Triple Sensors Hot-Wire Anemometer in Three-Dimensional Flow, Y. T. Chew and R. L. Simpson, June, 110–119.

Sensitivity of Three Sensor Hot Wire Probe to a Yaw and Pitch Angle Variation, B. Lakshminarayana and R. Davino, June, 120–122.

Visualization Techniques for Unsteady Flows: An Overview, Mohamed Gad-el-Hak, September, 231–243.

Turbulence Measurements with Symmetrically Bent V-Shaped Hot-Wires. Part 1: Principles of Operation, M. Hishida and Y. Nagano, September 264–269.

Turbulence Measurements with Symmetrically Bent V-Shaped Hot-Wires. Part 2: Measuring Velocity Components and Turbulent Shear Stresses, M. Hishida and Y. Nagano, September, 270–274.

Laser Velocimeter Measurements in a Model Propeller Flowfield, J. Lepicovsky, December, 350–354.

COMPUTATIONAL FLUID DYNAMICS

Navier-Stokes Computation of Radial Inflow Turbine Distributor, T. C. Wu and W. Shvy, March, 29–32.

Supercomputing of Supersonic Flows Using Upwind Relaxation and MacCormack Schemes, Oktay Baysal, March 62–68.

Solution Procedure for Unsteady Two-Dimensional Boundary Layers, O. Key Kwon, R. H. Pletcher, and R. A. Delaney, March, 69–75.

Vectorizable Implicit Algorithms for the Flux-Difference Split, Three-Dimensional Navier-Stokes Equations, P-M. Hatwich, C-H. Hsu, and C. H. Liu, September, 297–305.

Consistent Boundary Conditions for Reduced Navier-Stokes (RNS) Scheme Applied to Three-Dimensional Viscous Flow, D. R. Reddy and S. G. Rubin, September, 306–314.

LAMINAR FLOWS

Incremental Pressure Drop Number in Parallel-Plate Heat Exchangers, T. V. Nguyen and I. L. Maclaine-cross, March, 93–96.

Time-Dependent Laminar Backward-Facing Step Flow in a Two-Dimensional Duct, F. Durst and J. C. F. Pereira, September, 289–296.

Very Low Reynolds Number Flow Through Screens, B. R. Munson, December, 462–463.

LAMINARIZATION

Predictions of the Laminarization Phenomena in an Axially Rotating Pipe Flow, Shurichiro Hirai, Toshimi Takagi, and Masaharu Matsumoto, December 424–430.

TURBULENT FLOWS

A Reynolds-Stress Model for Near-Wall and Low-Reynolds-Number Regions, Nobuyuki Shima, March, 38–44.

Experimental and Computational Investigation of the Two-Dimensional Channel Flow Over Two Fences in Tandem, F. Durst, M. Founti, and S. Obi, March, 48–54.

Some Observations of Flow Patterns and Statistical Properties of Three Component Flows, H. K. Kytömaa and C. E. Brennen, March, 76–84.

Eddy Viscosity Distributions Through the Transition of an Incompressible Free Jet, S. Emami, G. Morrison, and G. Tatterson, March, 98–100.

Module Friction Factors and Intramodular Pressure Distributions for Periodic Fully Developed Turbulent Flow in Rectangular Interrupted-Plate Ducts, R. K. McBrien and B. R. Baliga, June 147–154.

A Comparison of Algebraic and Differential Second-Moment Closures for Axisymmetric Turbulent Shear Flows With and Without Swirl, S. Fu, P. G. Huang, B. E. Launder, and M. A. Leschziner, June, 216–221.

Mean Flow and Turbulence Measurements of Annular Swirling Flows, F. M. Yowakim and R. J. Kind, September, 257–263.

An LDA Study of the Backward-Facing Step Flow, Including the Effects of Velocity Bias, E. W. Adams and J. K. Eaton, September, 275–282.

Radial and Axial Turbulent Flow Measurements with an LDV in an Axisymmetric Sudden Expansion Air Flow, R. P. Durrett, W. H. Stevenson, and H. D. Thompson, December, 367–372.

Symmetric and Asymmetric Turbulent Flows in a Rectangular Duct With a Pair of Ribs, T.-M. Liou and C.-F. Kao, December, 373–379.

Measurement and Prediction of the Effects of Nonuniform Surface Roughness on Turbulent Flow Friction Coefficients, R. P. Taylor, W. F. Scaggs, and H. W. Coleman, December, 380–384.

Measurement and Prediction of the Effects of Rough Wall Effects on Friction Factor-Uniform Roughness Results, W. F. Scaggs, R. P. Taylor, and H. W. Coleman, December, 385–391.

The Mean Flow Structure Around and Within a Turbulent Junction of Horseshoe Vortex—Part I: The Upstream and Surrounding Three-Dimensional Boundary Layer, J. D. Menna and F. J. Pierce, December, 406–414.

The Mean Flow Structure Around and Within a Turbulent Junction of Horsehose Vortex—Part II: The Separated and Junction Vortex Flow, F. J. Pierce and M. D. Harsh, December, 415–423.

Determination of Incompressible Flow Friction in Smooth Circular and Noncircular Passages: A Generalized Approach Including Validation of the Nearly Century Old Hydraulic Diameter Concept, N. T. Obot, December, 431–440.

BLUFF-BODY FLOWS

Theoretical Calculations of the Flow Around a Rotating Circular Cylinder Placed in a Uniform Flow, Taha K. Aldoss and Awad Mansour, March, 96–97.

Development of the Reattached Flow Behind Surface-Mounted Two-Dimensional Prisms, J. Antoniou and G. Bergeles, June, 127–133.

Effect of Free-Stream Turbulence on Characteristics of Fluctuating Forces Acting on Two Square Prisms in Tandem Arrangement, H. Sakamoto and H. Haniku, June, 140–146.

Details of the Computed Flow Field Over a Circular Cylinder at Reynolds Number 1200, C. L. Rumsey, December, 446–452.

JET FLOWS

The Dynamics of Small Annular Jets, José Meseguer, June, 123–126.
Potential Core of a Submerged Laminar Jet, Shiro Akaike and Mitsumasa Nemoto, December, 392–398.

GENERAL FLUID MECHANICS

Experimental Investigation of Morel's Method for Wind Tunnel Contractions, E. G. Tulapurkara and V. V. K. Bhalla, March, 45–47.
Thermally Induced Flow in a Rotating Annulus Filled with a Compressible Fluid, M. A. Ortega and J. T. Sielawa, June, 134–139.
A Simple Model for the Critical Swirl in a Swirling Sudden Expansion Flow, W. L. H. Hallett, June, 155–160.
Pressure-Driven Ranque-Hilsch Temperature Separation in Liquids, R. T. Balmer, June, 161–164.
Comparison of Minimum Length Nozzles, B. M. Agrow and G. Emanuel, September, 283–288.
Adiabatic and Diabatic Flow Studies by Shear Stress Measurements in Annuli With Inner Cylinder Rotation, Y. A. G. Abdallah and J. E. R. Coney, December, 399–405.
A Weakly Compressible Flow Model and Rapid Convergence Methods, Charles C. S. Song and Mingshun Yuan, December, 441–445.

MULTIPHASE BUBBLY FLOWS

Effects of Separation on Partial Cavitation, C. Pellone and A. Rowe, June, 182–189.
A Model for Predicting Tip Vortex Cavitation Characteristics, V. H. Arakeri, H. Higuchi, and R. E. A. Arndt, June, 190–193.
Temperature Effects on Single Bubble Collapse and Induced Impulsive Pressure, A. Shima, Y. Tomita, and T. Ohno, June, 194–199.
Comparison of Holographic and Coulter Counter Measurements of Cavitation Nuclei in the Ocean, T. J. O'Hern, L. d'Agostino, and A. J. Acosta, June, 200–207.
Observations on the Development of a Tip Vortex on a Rectangular Hydrofoil, T. B. Francis, and J. Katz, June, 208–215.
The Role of Eigensolutions in Nonlinear Inverse Cavity-Flow Theory, B. R. Parkin, September, 315–324.
An Optical Method for Determining Bubble Size Distributions—Part I: Theory, P. R. Meernik and M. C. Yuen, September, 325–331.
An Optical Method for Determining Bubble Size Distributions—Part II: Application to Bubble Size Measurement in a Three-Phase Fluidized Bed, P. R. Meernik and M. C. Yuen, September, 332–338.

MULTIPHASE PARTICLE FLOWS

Modelling Collisional Stresses in a Dense Fluid-Solid Mixture, H. H. Shen, M. A. Hopkins, and N. L. Ackerman, March, 85–90.
Deposition and Resuspension of Gas-Borne Particles in Recirculating Turbulent Flows, M. W. Reeks and D. Hall, June, 165–171.
An Experimental and Numerical Study of Flow and Convective Heat Transfer in a Freely Falling Curtain of Particles, J. Hruby, R. Steeper, G. Evans, and C. Crowe, June, 172–181.
The Effect of Particle Shape on Pressure Drop in Turbulent Pipe Flow of a Gas-solid Suspension, M. T. Coughran, June, 222.
On the Drag Coefficient and the Correct Integration of the Equation of Motion of Particles in Gases, E. E. Michaelides, September, 339–341.

LIST OF JFE REVIEWERS, MARCH, 103–104.

Readers of

The Journal of Fluids Engineering Will Be Interested In:

FED-Vol. 78

Third International Symposium on Gas-Solid Flows — 1989

Editors: D.E. Stock & J.J. Jurewicz

This publication covers a wide range of topics related to gas-solid flows and includes a large number of papers that deal with either swirling flows, fluidized beds, or combustion.

1989 Order No. H00459 ISBN 0-7918-0341-4 128 pp.
$40 List / $20 ASME Members

To order, write ASME Order Department, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300
or call 1-800-THE-ASME (843-2763) or FAX 1-201-882-1717.